IDAHO CONSERVATION LEAGUE

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Karen Ritland
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Sent via email to: comments-northern-nezperce@usda.gov

May 17, 2021

RE: Waterline Placer Exploration Project

Dear Ms. Ritland:

I am writing on behalf of the Idaho Conservation League to comment on the Waterline Placer Exploration Project. The Idaho Conservation League has been Idaho's leading voice for conservation since 1973. As Idaho's largest state-based conservation organization, we represent over 30,000 supporters, many of whom have a deep personal interest in protecting human health and the environment. The Idaho Conservation League works to protect these values through public education, outreach, advocacy and policy development.

The Forest Service proposes to exclude this project from documentation in an environmental assessment or environmental impact statement. However, the Category listed at 36 CFR 220.6(e)(8) has never been programmatically assessed under the National Environmental Policy Act, and therefore, CE Category 8 is illegitimate. A detailed environmental review of the project is needed to determine and disclose the cumulative effects of the proposed action when taken with the long history of mining in the project area. By categorically excluding the project from an environmental assessment or environmental impact statement, the Forest Service will fail to take the requisite hard look at the cumulative effects of all past, present, and proposed mining operations in the project area.

We are also concerned about how many times mining operators will be allowed to return to the same sites, causing further environmental degradation, especially when virtually none of the proponents can generate a profit. As such, we encourage the Forest Service to determine the validity of the claims associated with the proposed Plans of Operations. Samples from the site should be provided to a certified minerals examiner, so that the validity of Mr. Fry's claims may be determined. If Mr. Fry cannot locate an economically viable deposit, then his claims should be invalidated to protect this area from further mining and environmental degradation.

Furthermore, the Forest Service should require the operator to restore the site to a better condition than they found it. The 0.25-mile access road should be fully decommissioned and obliterated to deter illegal motorized access and protect resources. Additionally, the Forest Service should require the operator to reclaim the tailings impoundment by restoring the site to its natural topography and hydrologic patterns or as close as possible given the heavily disturbed nature of the site.

Please be sure to alert me of any additional opportunities to comment on this project. I would also like to ask that you inform me of the availability of any decision documents related to this project if it is approved. I look forward to further conversations with you and your staff regarding this project.

Sincerely,

Brad Smith
North Idaho Director

Waterline Placer Exploration Project

National Environmental Policy Act compliance

Illegitimate categorical exclusion

It is improper for the Forest Service to use the categorical exclusion set forth at 36 CFR 220.6(e)(8) ("Category 8") to approve the project. Instead, the Forest Service must prepare, as appropriate under the National Environmental Policy Act ("NEPA"), an environmental assessment ("EA") or an environmental impact statement ("EIS").

The Forest Service may not apply the Category 8 exemption because the agency has never programmatically analyzed the potential direct, indirect, and cumulative impacts of the category of actions contemplated by Category 8. In *Sierra Club v. Bosworth*, the Ninth Circuit held that an agency's decision to establish a category of actions that are excluded from full NEPA review can only be made with a full understanding of the significance of the impacts resulting from application of the category. 510 F.3d 1016, 1027 (9th Cir. 2007) ("The Forest Service must perform this impacts analysis prior to promulgation of the CE."). Specifically, "the Forest Service must perform a programmatic cumulative impacts analysis for the…CE." *Id*. at 1029. In *Bosworth*, the Ninth Circuit invalidated the Forest Service's reliance on a categorical exclusion that was promulgated without a complete analysis of cumulative and other impacts. The Court then enjoined projects approved pursuant to that categorical exclusion. *Id*. At 1026-30. The Court explained:

> *Relying solely on a project level analysis is inadequate because it fails to consider impacts from past, present, or reasonably foreseeable Fuels CE projects which may be located in close proximity, in the same watershed or endangered species habitat.*

Bosworth, 510 F.3d at 1027.

The Court also noted that the cumulative impacts analysis "is of critical importance in a situation such as here, where the categorical exclusion is nationwide in scope and has the potential to impact a large number of acres." *Id*. at 1028.

The Forest Service's use of the Category 8 exemption in the approval of mining projects is similarly flawed. The agency has never performed a direct, indirect, or cumulative impacts analysis (or any of the required Endangered Species Act ("ESA") consultation and analysis) on Category 8 and the related provisions in Chapter 30 of the Forest Service Handbook regarding extraordinary circumstances. Like *Bosworth*, the Forest also never reviewed the significance factors required by NEPA in assessing whether its action (adopting a categorical exclusion and the extraordinary circumstances provision) may have significant impacts. Absent this review pursuant to NEPA and ESA, the Forest Service cannot rely on Category 8 and the related provisions in Chapter 30 for approval of the project. Instead, the Forest Service must prepare an EA at a minimum. Through documentation in an EA, the Forest Service may find that significant effects will result, and in that case, the agency would then need to prepare an EIS.

Documentation in an EA or an EIS would also ensure that the combined cumulative effects of any past, present, or reasonably foreseeable impacts of the project are considered when taken with other agency actions with similar timing, location, or effects. These impacts include but are not limited to:

- Road construction;
- Timber management;
- Mineral exploration and development;
- Livestock management;
- Travel management; and
- Wildfire, prescribed fire, or other activities.

Appropriate environmental review

Since the categorical exclusion set forth at 36 CFR 220.6(e)(8) is illegitimate, the Forest Service must either approve the project under another appropriate, programmatically-approved CE or document the effects of the proposed Plan of Operations in an environmental assessment ("EA") or an environmental impact statement ("EIS"). When a proposed agency action appears to fit the criteria for a particular CE, it may only be categorically excluded from further analysis and documentation in an EA or EIS when "there are no extraordinary circumstances related to the proposed action." 36 CFR § 220.6(a).

If there is any uncertainty regarding the significance of the environmental effects of the proposed Plan of Operations, then the responsible official should prepare an EA. 36 CFR § 220.6(c). "The purpose of an EA is to provide the agency with sufficient evidence and analysis for determining whether to prepare an EIS or to issue a [Finding of No Significant Impact]." *Metcalf v. Daley*, 214 F.3d 1135, 1143 (9th Cir. 2000) (citing 40 CFR § 1508.9). "Because the very important decision whether to prepare an EIS is based solely on the EA, the EA is fundamental to the decision-making process." *Id*.; see also 40 CFR § 1500.1(b); *Idaho Sporting Congress*, 137 F.3d at 1151.

If the responsible official determines that the proposed Plan of Operations may have a significant environmental effect, then the agency should prepare an EIS. An EIS is required for any "major federal action significantly affecting the quality of the human environment." 42 USC § 4332(2)(C). In the EIS, the agency must consider the direct, indirect, and cumulative environmental impacts. 40 CFR § 1502.16; 40 CFR § 1508.8; 40 CFR § 1508.25(c). Direct effects are caused by the action and occur at the same time and place as the proposed project. *Id*. § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. *Id*. § 1508.8(b). Both types of impacts include "effects on natural resources and on the components, structures, and functioning of affected ecosystems," as well as "aesthetic, historic, cultural, economic, social or health [effects]." *Id*. Cumulative effects are defined as the impacts resulting from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. 40 CFR § 1508.7. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. *Id.*

Categorically excluding the project from a detailed environmental review will result in the failure of the Forest Service to consider the effects of the project when taken with other past, present, and reasonably

foreseeable actions. In particular, we are concerned that Mr. Schneider's proposed Plan or Operations will result in irreversible degradation of McGuire Creek, which is a relatively small stream that has already been heavily impacted by past mining. At a minimum, the Forest Service should prepare an EA and consider whether or not the proposed Plan of Operations may have a significant impact on the environment because it will answer the question regarding whether or not whether or not an EIS is warranted. A more detailed environmental review would also ideally discuss the cumulative effects associated with the projects and the significant history of past mining activities in the project area.

Monitoring and mitigation

Regulations implementing NEPA require inclusion of "appropriate mitigation measures not already included in the proposed action or alternatives." 40 CFR § 1502.14(f). Moreover, federal agencies are required to "[s]tate whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program shall [also] be adopted and summarized where applicable for any mitigation." 40 CFR § 1505.2(c). Mitigation is defined at 40 CFR § 1508.20(a)-(e):

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

(e) Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation opportunities associated with this site that are not already listed in the scoping notice include fully decommissioning and obliterating the "primitive" 0.25-mile access road, backfilling and storing the settling ponds, and reclamation of the tailings impoundment by restoring the natural topography and drainage patters at the site and planting native vegetation.

We have encountered numerous mining projects that have violated best management practices ("BMPs") and Plans of Operations. A formal monitoring plan should be developed and described in the decision document. Monitoring should be conducted regularly during the operation and reclamation phases to ensure that BMPs are being applied as required and to make changes when BMPs are not meeting expectations regarding the protection of resources.

Mining law

Orderly steps in the development of mines

The Forest Service may limit the scope of a Plan of Operations to match the appropriate step in the normal orderly development of a mine by a prudent person. The agency is not obligated to approve a proposed Plan of Operations if the plan does not fit the next logical step in the orderly development of mines as outlined in the Forest Service Handbook at FSH 2809.15, Section 11. The actions and

expenditures of labor and resources by a person of ordinary prudence using industry-accepted techniques to prospect, explore, develop, produce, close and reclaim a valuable mineral deposit using methods, structures and equipment appropriate to the geological terrain, mineral deposit, and stage of development and reasonably related activities include:

Prospecting - the preliminary searching for outcrops or surface exposures of mineral deposits. At this earliest stage of mining activity, it is characterized by activities that result in low impact to surface resources, such as driving on existing roads, hiking or riding on trails or cross country, field and geologic reconnaissance mapping, taking small samples by hand or with small highly portable tools, stream sediment sampling, panning of placer samples or small-scale sluicing, soil sampling, claim staking, and using portable geophysical equipment.

Exploration - the second stage in the logical progression of mining activities. It usually occurs once a geologically favorable target area, with moderate to high mineral potential, is identified through prospecting, but subsurface information is still needed to determine the presence and extent of any mineral resources and whether any of this constitutes economic reserves. Its purpose is to narrow the search for a mineral resource, better define a target, and ultimately to discover a valuable mineral deposit that can be mined, removed, and marketed at a profit.

Development - the stage of mining activity that occurs once exploration drilling and other activities have identified a valuable mineral deposit (that is, ore grade and a significant reserve is established), but the dimensions of the ore deposit are not yet fully delineated (it may be "open" on several sides), and all the parameters necessary for mine design and production are not yet known or understood. The purpose of development is to delineate the ore body, establish grade and reserves with a high degree of probability so economics of the deposit can be fully evaluated, and provide the claimant/operator with information necessary to make a decision as to when and whether to invest the often sizable capital expenditure necessary to progress to the next stage of mining activity—production.

Production - The most prevalent activities at this stage are mining, removing, and processing of previously discovered and developed ore deposit and marketing a product. The quantity and quality of the ore at this stage is known with a high level of certainty, and the operator has made a firm commitment through capital expenditures and engineering design and construction.

Abandonment and Reclamation - Reclamation should occur at all stages of mining activity where surface disturbance results. However, abandonment and final reclamation occur after production has ceased because the orebody mined out. Long-term mine closure may result from changing economics, such as declining metals prices or operating cost increases. Regardless of the cause, when production activities have ceased or significantly declined and are expected to remain so for the long term, equipment, structures, and other facilities, as they are no longer needed, should be removed.

The Forest Service should determine whether the proposed Plan of Operations matches one of these stages and if so, whether it is the next logical stage in the development of the deposit. If the proposed Plan of Operations does not follow these orderly steps by jumping ahead, then the Forest Service should send the proposed Plan of Operations back to the proponent with instruction for modification.

Conversely, if exploration has previously occurred on these claims, then the Forest Service should determine if further exploration is prudent. Miners should not be allowed to return to a previously explored site if prior exploration activities demonstrate that no economically viable mineral deposit exists.

Discovery of a valuable mineral deposit

There is a history of mining exploration in the project area, which should be described in the environmental analysis and decision documents, including any previous prospecting, exploration, and mining. Miners should not be allowed to continue to revisit the same site over and over again, degrading environmental resources in the process. To the degree that there is enough information from prior exploration and mining at the site, the Forest Service should challenge the validity of the operator's claims. If there is insufficient information available to determine the validity of the claims, then the Forest Service should require the operator to produce samples for testing by a certified minerals examiner. The test results should then be used to validate or invalidate the claims.

A discovery of a valuable mineral deposit is the essential requirement for a valid mining claim. *U.S. v. Coleman*, 390 U.S. 599 (1968); U*.S. v. Davy Lee Waters, et al.*, 146 IBLA 172, 182 (1998); *U.S. v. Grigg*, 8 IBLA 331, 336 (1972). As the Interior Board of Land Appeals stated in *U.S. v. Garner*: "We emphasize that discovery is the sine qua non for a valid mining claim." 30 IBLA 42, 65 (1977).

Federal statute does not describe what constitutes a valuable mineral deposit. In the absence of clear statutory direction, the government has adopted the "prudent man test." Under this test, a valuable mineral deposit is one that a prudent person would invest time and money to develop. This test was first articulated by the Department of Interior in 1894, in the adjudication of *Castle v. Womble*, 19 L.D. 455 (1894), which held:

> *…where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine, the requirements of the statute have been met.*

The U.S. Supreme Court approved this definition in *Chrisman v. Miller*, 197 U.S. 313 (1905).

The Department of Interior Solicitor issued an opinion in 1933, noting the need for a distinct showing that the mineral could be mined, removed, and marketed at a profit. In 1968, the U.S. Supreme Court approved the opinion in *U.S. v. Coleman*, 390 U.S. 602-603 (1968). The marketability test is supplemental to the prudent man test and considers deposit economics and market entry. The claimant is required to show a reasonable prospect of making a profit from the sale of minerals from a claim or a group of contiguous claims.

Discovery is required on each claim based on an actual physical exposure of the mineral deposit within the claim boundaries. In *Jefferson-Montana Copper Mines Co.*, 41 L.D. 321 (1912), the Department of Interior established the full test for a lode claim:

> *To constitute a valid discovery upon a lode claim, three elements are necessary:*

1. *There must be a vein or lode of quartz or other rock-in-place*
2. *The quartz or other rock-in-place must carry gold or some other valuable mineral deposit*
3. *The two preceding elements, when taken together, must be such that as to warrant a prudent man in the expenditure of his time and money in the effort to develop a valuable mine.*

It must be remembered that the test focuses on the prudent person, not the prudent miner, and certainly not the claimant. As the Supreme Court stated in the seminal case of *Chrisman v. Miller*: "The facts which are within the observation of the discoverer, and which induce him to locate, should be such as would justify a man of ordinary prudence, not necessarily a skilled miner, in the expenditure of his time and money in the development of the property." 197 U.S. 313, 322-323 (1905) *quoting* Lindley on Mines § 336 (1st ed.). The Interior Secretary has stated: "It is thus evident that the willingness of a mining claimant, grounded only in the hope of success, to expend time and money in further efforts to develop a mine will not suffice." *U.S. v. Nevitt*, A-30030 (July 28, 1964). As the IBLA stated:

> *Finally, the "Prudence" to which reference is made in the "prudent man test" first articulated in Castle v. Womble, is measured by the probability of developing a valuable mine as determined by an ordinary man with knowledge and understanding of all of the facts; not by the degree of prudence which a particular claimant exercises in the conservation of his individual economic means.*

U.S. v. Mortensen, 7 IBLA 123, 126 (1972).

Regarding the nuts-and-bolts of proving a discovery, the IBLA has defined how a claim should be analyzed to determine the presence (or absence) of a valuable mineral deposit: "Claim validity is determined by the ability of the claimant to show that a profit can be made after accounting for the costs of compliance with all applicable laws . . ." *Great Basin Mine Watch*, 146 IBLA 248, 256 (1999) (emphasis added). The cost figures used by a claimant to prove the existence of a valuable mineral deposit should show that the claimant has a reasonable likelihood of developing a paying mine. *In re Pacific Coast Molybdenum Co.*, 90 ID 352, 361 (1983). *See also*, *U.S. v. Alaska Limestone Corp.*, 66 IBLA 316, 323 (1982) (The focal question in the prudent man test is the development of a valuable mine.).

Costs of production and extraction of a mineral have a direct bearing on whether a prudent person would be justified in expenditure of labor and means. *Converse v. Udall*, 399 F.2d 616, 622 (9th Cir., 1969) *cert. denied* 89 S.Ct. 635 (1969). Both geologic and economic information go towards proving that a claimant has discovered valuable mineral deposits. *Dennis J. Kitts*, 84 IBLA 338, 342 (1985). Finding a valuable mineral on a property is only the "first step" in the prudent person determination. *Foresyth*, 100 IBLA 185, 216 (1988). In addition, the costs of extraction "must be examined" to determine whether the costs of removal and preparation of the minerals for sale is less than the sales price. *Id.* Indeed, operating costs are "as critical to a determination of the practical value of a mining claim as the intrinsic value of the mineral present on the claim." *U.S. v. Calhoun and Howell*, A-31004 (August 29, 1969), GFS SO-1969-35 (Mining). Therefore, a valid discovery can never be fully proven until the full mining costs are subtracted from the expected revenues.

In addition to production costs, environmental compliance and reclamation costs must also be factored in the claimant's economic analysis in order to prove the existence of a valuable mineral deposit. Since a sufficiently profitable mining operation must be proven for a deposit to be considered valuable, determining the costs of environmental compliance is a necessary precursor towards validating a discovery. *Great Basin Mine Watch*, 146 IBLA 248, 256 (1999); U.S*. v. Pittsburgh Pacific Company*, 30 IBLA 388,405 (1977), *citing U.S. v. Kosanke Sands*, 12 IBLA 282, 298-99 (1973). As the Board in *Pittsburgh Pacific* recognized, environmental cost factors may be significant enough to "stand in the way of a profitable mining operation" and therefore, must be addressed by the claimant. *Id*. at 393. A determination of claim validity is necessary to protect environmental resources. If the claims are determined to be invalid, such a determination would protect these sites from additional future exploration and mining.

Surface use determination

If a proposed Plan of Operations is unnecessarily and unreasonably destructive to surface resources and damaging to the environment, the Forest Service should seek to modify the Plan of Operations to minimize effects to National Forest System Resources as required by 36 CFR § 228.1. According to the Forest Service Handbook, when assessing whether an operation is unnecessarily and unreasonably damaging national forest resources, the Forest Service should consider:

1. *Site-specific circumstances of the operation being considered and resources affected.*
2. *Some possible reasonable alternatives to the proposal, and their potential effects compared to the proposal.*
3. *Standard industry practices; that is, typical approved activities for operations that have similar geographic settings and levels of mineral resource evidence.*
4. *Any established best management practices for proposed use or similar uses.*
5. *New research and technology that may present some viable options for minimizing effects on national forest resources.*

FSH 2809.15, Sec. 13.9.

Where the authorized officer and the claimant are unable to agree on appropriate and reasonable modifications to the proposed Plan of Operations and mitigation, a Surface Use Determination process should be undertaken. FSH 2809.15, Sec. 11.2. A qualified minerals examiner should prepare the surface use determination report as described in the Forest Service Handbook. FSH 2809.15, Sec. 13. Appropriate modifications to the Plan of Operations should be made and as well as any necessary reclamation and mitigation.

Fish and wildlife

Endangered Species Act Consultation

The Forest Service must prepare and submit biological assessments ("BAs") describing the potential effects of the Proposed Plan of Operations to listed species to the Fish and Wildlife Service and National Marine Fisheries Service and initiate formal consultation. No incidental take permits should be

authorized in association with the project. Steps should be taken to avoid effects to candidate, threatened, and endangered species. Where effects are unavoidable, appropriate mitigation and/or restoration measures should be developed and required.

Riparian habitat conservation areas

The proposed Plan of Operations must comply with the Forest Plan including but not limited to, the objectives, standards, and guidelines associated with INFISH and PACFISH, which exist to protect aquatic habitat and native inland and anadromous fish. The environmental analysis and decision document should describe how the Riparian Management Objectives associated with INFISH and PACFISH will be met. The Forest Service should also resist any temptation to approve a site-specific Forest Plan Amendment that exempts the operator from the requirements of the Forest Plan.

Elk

The environmental analysis should describe the current condition of applicable elk management units. The Forest Service should then compare current levels of elk habitat effectiveness to Forest Plan objectives. Mining activities that would violate the Forest Plan's objectives for elk habitat should be avoided or modified to ensure compliance. If elk habitat effectiveness objectives have not been met, then open motorized roads or trails should be closed to satisfy elk habitat objectives.

Listed fish

Yet another reason not to categorically exclude the project from a detailed environmental review in an EA or an EIS is to ensure that potential effects to listed species are adequately considered, disclosed, and made available to the public to comment on. The environmental analysis should describe all waterways with listed fish or designated critical habitat. Consistent with the Nez Perce Forest Plan, the Forest Service should describe whether or not water quality objectives for prescription watersheds have been met. If not, the Forest Service should demonstrate how it will meet the Forest Plan's upward trend requirements. If water quality objectives have been met, then the Forest Service must demonstrate how water quality will be maintained.

Water

Surface water

The environmental analysis should describe all project watersheds, including current water quality conditions, designated beneficial uses, and any applicable Total Maximum Daily Loads ("TMDLs") or water quality standards as provided by the Clean Water Act. Approved mining operations must not further impair waters listed under Section 303(d) of the Act. Mining operations must also not degrade waters that meet applicable water quality standards. The environmental analysis must demonstrate that compliance with the Clean Water Act will be achieved if these mining operations are to be approved. If the proponents cannot ensure compliance with the Clean Water Act or other federal laws, then the Forest Service is not obligated to approved the proposed Plans of Operations.

Ground water

The environmental analysis should also describe existing groundwater conditions including but not limited to, the location and extent of groundwater resources, the connection between surface water and ground water in the project area, and groundwater quality. If groundwater data is not already available, then the Forest Service should require the operator to collect it. This data is important not just for understanding the current condition of groundwater resources. Characterization of groundwater resources is also necessary for understanding the potential effects of the proposal to groundwater resources.

Mining operations can influence groundwater hydrology and contaminate ground water resources. Drill fluids, solvents, and other contaminates may end up in groundwater if proper precautions are not taken to protect ground and surface water resources. Among other things, potential effects to groundwater may depend on local geologic conditions such as bedrock fracture density and hydraulic conductivity of the aquifer.

Water rights

If the operator plans to withdrawal or divert water for their operation, then a water right must be sought and obtained from the Idaho Department of Water Resources. The Forest Service should require proof that a water right has been obtained from the Idaho Department of Water Resources prior to approving any Plan of Operations, or initiating any ground-disturbing activities. The timing of water withdrawal should be defined to avoid impacts to aquatic organisms and sensitive, threatened, and endangered species.

Hazardous materials

All fuel and solvents need to be properly contained, labeled, and stored outside of Riparian Habitat Conservation Areas. Hazardous materials should be transported in small amounts to minimize impacts if there is a spill. A hazardous material plan needs to be in place in the event of a fuel or solvent leak anywhere along the transportation route. Hazardous wastes including grease, lubricants, oil, and fuels need to be disposed off-site in an environmentally appropriate manner on a weekly basis. Fuel containment equipment, including chemical absorbers and booms to intercept stream transport must be on site. All workers need to be trained in the use of this equipment.

Noxious weeds

Ground disturbance and vehicular traffic will accelerate the spread of noxious weeds. All equipment should be cleaned to dislodge any soil, seeds, and vegetation before entering National Forest System lands. Work crews trained in noxious weed recognition and removal should patrol the project area. Weeds or trash should be removed. These stipulations should be included in the Plans of Operations.

Occupancy of national forest lands

The proponent and any associated crew members should be required to properly secure and store all food, trash, personal hygiene products, and other wildlife attractants. This is necessary to not only ensure their personal safety, but it is also to ensure that wildlife do not gain access to attractants and

become conditioned to seek human sources of food. With recent grizzly bear sightings on the forest, this is more important than ever.

Reclamation and bonding

Forest Service regulations at 36 CFR § 228 require the Forest Service to establish an adequate reclamation bond for mining operations. Bonding costs should be detailed in the environmental analysis for each alternative.

The bond must be substantive enough to cover the worst possible impacts to the human and natural environment and at a minimum, take into consideration:

- Possible spills of fuels and other hazardous materials
- Impacts to the ecosystem
- Road decommissioning
- Mine drainage treatment in perpetuity
- Monitoring

Bonding costs should be calculated according to Forest Service pricing, including the cost of renting and transporting equipment and wages for all workers and supervisors. Alternatively, a third-party contracted by the Forest Service could calculate the bonding costs. In any event, the operator should not calculate the bonding costs.

The environmental analysis should describe the reclamation process and all associated costs in detail. This analysis should include the volume and type of material to be moved, equipment needed, location for stockpiling, and sequence for reclamation.

To the extent practical, reclamation activities should take place concurrently with the mining operation.